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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-----------------------|------------------|
| 10/065,450 | 10/18/2002 | Thomas L. Toth | GEMS8081.138 | 1346 |
| 27061 | 7590 | 02/24/2005 | EXAMINER | |
| ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (GEMS) | | | SHAW, SHAWNA JEANNINE | |
| 14135 NORTH CEDARBURG ROAD | | | ART UNIT | |
| MEQUON, WI 53097 | | | PAPER NUMBER | |

3737

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|-----------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/065,450 | TOTH ET AL. <i>CA</i> | |
| | Examiner | Art Unit | |
| | Shawna J. Shaw | 3737 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-30 and 38-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-30, 38-46 and 50-52 is/are rejected.
- 7) ☒ Claim(s) 47-49 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 18-30, 38-46 and 50-56 have been considered but are moot in view of the new ground(s) of rejection. The examiner notes that applicants' amendment removing "helical" from "artifact index" has effectively broadened the scope of the claims. Applicants' amendments and comments have overcome the previous 112 rejections.

Claim Objections

2. Claim 48 is objected to because of the following informalities: In claim 48, "the step of determining a helical artifact index" lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 18-24, 29, 30, 38-40, 42 and 53-56 are rejected under 35 U.S.C. 102(b) as being anticipated by Toth et al. '487 of record.

Toth et al. disclose a computerized method for determining and displaying a calibration object error vector, or artifact index, including: acquiring ratio image data (comprising a plurality of pixels) from two calibration objects, or phantoms; extracting

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and filtering a region of interest (wherein the process of extracting involves masking, or setting non-selected pixels to zero, col. 4 lines 13-24); and multiplying by a CT number scale. See e.g., claims 1-12.

Claim Rejections - 35 USC § 103

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 28 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toth et al. '487 of record.

Regarding claims 28 and 41, although Toth et al. does not specifically disclose imaging values within +/-40 CT numbers, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to image within such a range because Applicant has not disclosed that +/-40 CT numbers

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provides an advantage, is used for a particular purpose, or solves a stated problem.

One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well with the CT numbers used by Toth et al. because both effectively display an error vector, or index.

8. Claims 25-27, 43-46 and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toth et al. of record in view of Yamada.

Regarding claims 25-27 and 43-46, Toth et al. discloses obtaining an error vector, but does not specifically address a standard deviation measure. In the same field of endeavor, Yamada demonstrates that variance information (obtained from the standard deviation) may equivalently be replaced for vector information [0012], [0193]. It would have therefore been obvious at the time the invention was made to person of ordinary skill in the art to use local variance information instead of vector information in the invention of Toth et al. as taught by Yamada as an art recognized functional equivalent and as is well known.

Regarding claims 50-52, Toth et al. differs from the claimed invention in that the step of filtering the imaging data with a 5x5 array or Hanning kernel is not specifically addressed. In the same field of endeavor, Yamada demonstrate using a 5x5 filter (fig. 8, 10, table 1, [0114-0122]). It would have therefore been obvious at the time the invention was made to a person of ordinary skill in the art to use a 5x5 filter for the error vector of Toth et al. as is well known in the art. In addition, although Toth et al. does not specifically disclose a Hanning kernel, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to use a

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Hanning kernel because Applicant has not disclosed that such an array provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well with the array used by Toth et al. in view of Yamada because both effectively filter error vectors.

Allowable Subject Matter

9. Claims 47-49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

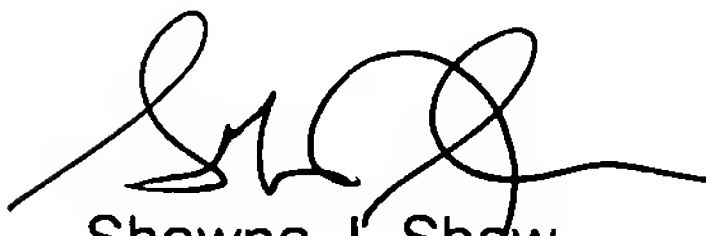
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawna J. Shaw whose telephone number is (571) 272-4743. The examiner can normally be reached on 6:45 a.m. - 3:15 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shawna J. Shaw
Primary Examiner
Art Unit: 3737
02/18/2005